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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,312	03/26/2004	Andrew Martin Mallinson	ESST-05001	7978

49100 7590 11/30/2006

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EXAMINER

YOUNG, BRIAN K

ART UNIT	PAPER NUMBER
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2819

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/810,312

Applicant(s)

MALLINSON ET AL.

Examiner

Brian Young

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/11/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/26/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. The Examiner has reviewed the IDS received 7/11/05.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rangan et al.

Regarding claims 1 and 2, Rangan et al disclose (see fig.2) a method of compensating for output error (noise) in a sigma delta circuit (40) which includes receiving an input signal (analog input, 66); feeding back a first error value (analog feedback signal, 72), which is derived from an output signal (70), to the input signal; subtracting a second error value (second analog feedback signal, 74), which is derived from adding the first error voltage value to the input signal, from the input signal; and outputting (70) an digital output signal result from the sigma delta circuit (70).

It is noted that in the sigma delta circuit (40) Rangan et al show a summation circuit (50) at the input for the feed back of the first feedback signal and do not specifically teach, "adding" the first feedback signal to the input signal.

However, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, that the feedback signal shown by Rangan et al could have been "added" to the input signal if desired. The feedback signal of Rangan et al is distinctly shown, as noted above, applied to a summation circuit (50), and, furthermore Rangan et al specifically show feedback signals "added" back to the input (see 54) elsewhere in the circuit. The purpose of the feedback signal is correct for distortion in the circuit. Therefore, it would have been obvious and desirable to combine the feedback signal with the input in whichever manner (adding or subtracting) is needed to achieve this condition. Rangan et al show (40) that feedback signals can be added back; therefore it is taught by Rangan et al that this is a desirable and accurate method for achieving the proper feedback control characteristics.

Regarding claim 3 Rangan et al show (fig.2) a filter (12) used in the first feedback signal (72).

Regarding claim 4, it is noted that Rangan et al do not show a filter used in the second feedback signal (74).

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made that a filter could have been used in the second feedback signal shown by Rangan et al. As taught by Rangan et al the use of a filter is to reduce noise, distortion and to delete any unwanted characteristics of a signal. Therefore it

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would have been obvious to use a filter in both feedback signals to achieve higher noise reduction characteristics in the circuit. And, the addition of a filter in the second feedback path, as taught in the first feedback path, would not have involved an inventive step but would have obviously duplicated something, which has been shown.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

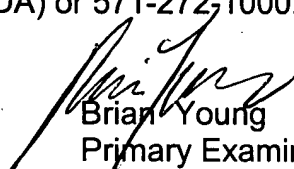
Kaneaki et al, Melanson, and Reusens et al disclose methods for feeding back signals in sigma delta systems.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Young whose telephone number is 571-272-1816. The examiner can normally be reached on Mon-Fri 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Brian Young
Primary Examiner
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